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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,387

04/13/2007

Kazuyoshi Tendou

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GRIFFIN & SZIPL, PC

SUITE PH-1

2300 NINTH STREET, SOUTH

ARLINGTON, VA 22204

EXAMINER

FEELY, MICHAEL J

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,387	<b>Applicant(s)</b> TENDOU ET AL.	
	<b>Examiner</b> Michael J. Feely	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20080515, 20070723, 20060612</u> .                            | 6) <input type="checkbox"/> Other: _____                          |

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**DETAILED ACTION**

***Pending Claims***

Claims 1-14 are pending.

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 7 recite the limitation "the colorant" in the molding material of claim 1.

There is insufficient antecedent basis for this limitation in the claim. Claims 6 and 7 should be dependent from claim 5.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 8, 9, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yano et al. (JP 2001-114986).

Regarding claims 1, 8, 9, and 14, Yano et al. disclose: **(1)** an epoxy resin molding material for sealing (Abstract; paragraphs 0001 & 0006-0007), comprising an epoxy resin (Abstract; paragraphs 0007 & 0017-0019), an epoxy resin curing agent (Abstract; paragraphs 0007 & 0020-0024), and a pitch (Abstract; paragraphs 0007-0016);

**(8)** comprising, as the epoxy resin, one or more resins selected from the group consisting of biphenyl type epoxy resins, bisphenol F type epoxy resins, thiodiphenol type epoxy resins, phenol-aralkyl type epoxy resins, and naphthol-aralkyl type epoxy resins (paragraphs 0017-0019);

**(9)** comprising, as the curing agent, one or more resins selected from the group consisting of phenol-aralkyl resins represented by a general formula (I) shown below and naphthol-aralkyl resins represented by a general formula (II) shown below (*see claim for structures*) (paragraph 0020); and

**(14)** an electronic component comprising an element that is sealed with the epoxy resin molding material for sealing according to claim 1 (Abstract; paragraphs 0001 & 0006-0007).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. (JP 2001-114986).

Regarding claims 3 and 4, Yano et al. fail to explicitly disclose; **(4)** wherein a carbon content of the pitch is within a range from 88 to 96% by weight; and **(3)** wherein an electrical resistivity of the pitch is at least  $1 \times 10^5$  ohm-cm.

Rather, they disclose a carbon content that embraces the instantly claimed range (*see paragraph 0008*). In light of this, it has been found that in cases where the claimed ranges overlap or lie inside the ranges disclosed in the prior art, a *prima facie* case of obviousness exists – *see MPEP 2144.05*. Furthermore, with this carbon content obviously satisfied, the skilled artisan would have expected the same or similar resistivity values. This is because the carbon content influences the electrical properties of carbon-based materials.

Therefore, the teachings of Yano et al. obviously satisfy the instantly claimed carbon content because they disclose a carbon content that embraces the instantly claimed range. Furthermore, with this carbon content obviously satisfied, the skilled artisan would have expected the same or similar resistivity values.

8. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. (JP 2001-114986) in view of Uchida et al. (JP 2003/327792).

Regarding claims 5-7, Yano et al. disclose 1-100 weight parts (*preferably 2-20 weight parts*) of pitch per 100 weight parts of epoxy resin (*see paragraph 0016*). Yano et al. also contemplate the use of a colorant (*see paragraphs 0026 & 0030*); however, they fail to disclose:

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(5) further comprising one or more materials selected from the group consisting of phthalocyanine-based dyes, phthalocyanine-based pigments, aniline black, perylene black, black iron oxide, and black titanium oxide as a colorant that contains no pitch; (6) wherein a combined quantity of the colorant that contains no pitch and the pitch is within a range from 2 to 15% by weight relative to the epoxy resin; and (7) wherein a quantity of the pitch relative to the combined quantity of the colorant that contains no pitch and the pitch is at least 30% by weight.

Uchida et al. disclose a similar sealing composition (*see Abstract; paragraphs 0001 & 0005-0007*). They establish that aniline black is recognized in the art as a suitable colorant for this type of resin system (*see Abstract; paragraphs 0001 & 0005-0007*). In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Furthermore, they establish that the colorant is provided in an amount of 0.2 to 2.0% by weight of the entire resin composition (*see paragraphs 0022-0023*). This range, in concert with the pitch range of Yano et al., would have obviously satisfied the instantly claimed ranges set forth in claims 6 and 7.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use aniline black, as taught by Uchida et al., as the colorant in the sealing composition of Yano et al. because the teachings of Uchida et al. demonstrate that aniline black, provided in an amount of 0.2% to 2.0% by weight of the entire composition, is recognized in the art as a suitable colorant for this type of resin system. Furthermore, the disclosed amount of aniline black, in concert with the pitch range of Yano et al., would have obviously satisfied the instantly claimed ranges set forth in claims 6 and 7.

9. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. (JP 2001-114986) in view of Maeda (JP 2001-335620).

Regarding claims 10-13, Yano et al. contemplate the use of an auxiliary flame retardant (*see paragraph 0016*); however, they fail to disclose: **(10)** further comprising a cyclic phosphazene compound; **(11)** wherein the cyclic phosphazene compound comprises a compound represented by a general formula (XVII) shown below (*see claim for structure*); **(12)** wherein at least one of R and R' represents a hydroxyphenyl group, and a number of hydroxyphenyl groups is within a range from 1 to 10; and **(13)** comprising a cross-linked cyclic phosphazene compound.

Maeda discloses a similar sealing composition (*see Abstract; paragraphs 0001 & 0003-0004*). They establish that the instantly claimed phosphazene compounds (*see Abstract; paragraph 0010*) and crosslinked phosphazene compounds (*see paragraph 0011*) are recognized in the art as suitable flame retardants for this type of resin system. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the instantly claimed phosphazene compounds and crosslinked phosphazene compounds, as taught by Maeda, as the auxiliary flame retardant in the sealing composition of Yano et al. because the teachings of Maeda establish that the instantly claimed phosphazene compounds and crosslinked phosphazene compounds are recognized in the art as suitable flame retardants for this type of resin system.

***International Search Report***

10. The international search report corresponding to the instant invention cites four X-references. All of the X-references have been considered; however, none of them appear to reasonably teach or suggest the ***pitch***-containing sealant of the instant invention.

***Allowable Subject Matter***

11. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to reasonably teach or suggest the composition as claimed, wherein **(2)** the pitch is mesophase microspheres isolated from a mesophase pitch.

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***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/  
Primary Examiner, Art Unit 1796

June 19, 2009